



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2013-0879; Directorate Identifier 2013-NE-30-AD; Amendment 39-17694; AD 2013-24-17]**

**RIN 2120-AA64**

**Airworthiness Directives; General Electric Company Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for General Electric Company (GE) GE90-110B1 and GE90-115B turbofan engines with certain high pressure compressor (HPC) rotor stage 2-5 spools installed. This AD requires removing these spools from service at times determined by a drawdown plan. This AD was prompted by reports of cracks in HPC rotor stage 2-5 spool aft spacer arms. We are issuing this AD to prevent failure of a critical life-limited rotating engine part, which could result in an uncontained engine failure and damage to the airplane.

**DATES:** This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

We must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215, phone: (513) 552-3272; email: [geae.aoc@ge.com](mailto:geae.aoc@ge.com). You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call (781) 238-7125.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2013-0879; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Tomasz Rakowski, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New

England Executive Park, Burlington, MA 01803; phone: (781) 238-7735; fax: (781) 238-7199; email: tomasz.rakowski@faa.gov.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We received reports from GE of cracks in the aft spacer arms of several HPC rotor stage 2-5 spools, which occurred before the spools reached their published cyclic life limit. The cracks developed under the seal teeth coating, so they were undetectable by maintenance inspections. This AD requires removal of these spools at a reduced cyclic life threshold, earlier than the published cyclic life limit. Because some engines have spools installed that already exceed the reduced cyclic life threshold, this AD provides a drawdown program to remove the spools within risk guidelines without grounding airplanes. This AD also prohibits spare spools that exceed the reduced cyclic life threshold from re-entering service. This AD is intended to prevent HPC rotor stage 2-5 spool cracks from growing and causing the spool to separate. This condition, if not corrected, could result in failure of a critical life-limited rotating engine part, which could result in an uncontained engine failure and damage to the airplane.

### **Relevant Service Information**

We reviewed GE Service Bulletin (SB) No. GE90-100 S/B 72-0499, dated August 14, 2013. The SB lists part serial numbers affected by this AD.

### **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

## **AD Requirements**

This AD requires removing certain HPC rotor stage 2-5 spools from service at times determined by a drawdown plan outlined in the paragraph (f) of the compliance section of this AD.

## **Differences Between the AD and the Service Information**

The schedule for removal of HPC rotor spools in this AD differs from that of GE SB GE90-100 S/B 72-0499, dated August 14, 2013. This AD uses cycles to determine compliance time rather than calendar dates, which are used in the SB, because the unsafe condition is driven by cycles rather than time.

## **FAA's Justification and Determination of the Effective Date**

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because of the short compliance times for HPC rotor stage 2-5 spools that are at or over the removal thresholds. Therefore, we find that notice and opportunity for prior public comment are impracticable and that good cause exists for making this amendment effective in less than 30 days.

## **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include the docket number FAA-2013-0879 and Directorate Identifier 2013-NE-30-AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

### **Costs of Compliance**

We estimate that this AD will affect two GE90 engines installed on airplanes of U.S. registry. There is no additional labor cost to comply with this AD. We estimate that the cost of a replacement HPC rotor stage 2-5 spool prorated part is \$192,800. Based on these figures, we estimate the total cost of this AD to U.S. operators to be \$385,600.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs" describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

**PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**2013-24-17 General Electric Company:** Amendment 39-17694; Docket No. FAA-2013-0879; Directorate Identifier 2013-NE-30-AD.

**(a) Effective Date**

This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to General Electric Company (GE) GE90-110B1 and GE90-115B turbofan engines with high pressure compressor (HPC) rotor stage 2-5 spools, part numbers (P/Ns) 351-103-106-0, 351-103-107-0, 351-103-141-0, 351-103-142-0, 351-103-144-0, 351-103-145-0, 351-103-148-0, 351-103-149-0, and 351-103-151-0, with spool serial numbers listed in paragraph 4, Appendix A of GE Service Bulletin (SB) No. GE90-100 S/B 72-0499, dated August 14, 2013.

**(d) Unsafe Condition**

This AD was prompted by reports of cracks in HPC rotor stage 2-5 spool aft spacer arms. We are issuing this AD to prevent failure of a critical life-limited rotating engine part, which could result in an uncontained engine failure and damage to the airplane.

**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(f) Parts Removal**

Remove from service HPC rotor stage 2-5 spools with serial numbers listed in paragraph 4, Appendix A of GE SB No. GE90-100 S/B 72-0499, dated August 14, 2013, as follows:

(1) For spools with fewer than 4,500 cycles since new (CSN) on the effective date of this AD, before exceeding 5,000 CSN.

(2) For spools with 4,500 CSN or more but fewer than 5,200 CSN on the effective date of this AD, within an additional 500 cycles in service (CIS) after the effective date of this AD but not to exceed 5,500 CSN.

(3) For spools with 5,200 CSN or more but fewer than 5,600 CSN on the effective date of this AD, within an additional 300 CIS after the effective date of this AD but not to exceed 5,800 CSN.

(4) For spools with 5,600 CSN or more but fewer than 5,800 CSN on the effective date of this AD, within an additional 200 CIS after the effective date of this AD but not to exceed 5,850 CSN.

(5) For spools with 5,800 CSN or more but fewer than 6,000 CSN on the effective date of this AD, within an additional 50 CIS after the effective date of this AD but not to exceed 6,000 CSN.

(6) For spools with 6,000 CSN or more on the effective date of this AD, before the next flight.

(7) For spools that are not installed on the effective date of this AD and are subsequently installed onto any engine after the effective date of this AD, before exceeding 5,000 CSN.

**(g) Prohibition Statement**

After the effective date of this AD, do not install or re-install onto any engine any HPC rotor stage 2-5 spool with a serial number listed in paragraph 4, Appendix A of GE SB No. GE90-100 S/B 72-0499, dated August 14, 2013, that exceeds 5,000 CSN.

**(h) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, may approve alternative methods of compliance for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(i) Related Information**

For more information about this AD, contact Tomasz Rakowski, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: (781) 238-7735; fax: (781) 238-7199; email: [tomasz.rakowski@faa.gov](mailto:tomasz.rakowski@faa.gov).



**(j) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) General Electric Company (GE) Service Bulletin No. GE90-100 S/B 72-0499, dated August 14, 2013.

(ii) Reserved.

(3) For GE service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215, phone: (513) 552-3272; email: [geae.aoc@ge.com](mailto:geae.aoc@ge.com).

(4) You may view this service information at FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call (781) 238-7125.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on November 27, 2013.

Carlos A. Pestana,  
Acting Assistant Directorate Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

[FR Doc. 2013-29055 Filed 12/13/2013 at 8:45 am; Publication Date: 12/16/2013]